State of New Jersey
Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

DEC 14 1999

Edward A. Hogan
Porzio, Bromberg & Newman
163 Madison Avenue
Morristown, NJ 07960

Re: Hexcel Corporation (Hexcel)
Lodi Borough, Bergen County
ISRA Case #86009
Remedial Action Reports Dated October 23, 1998, January 27, 1999, March 3, 1999, April 27, 1999 and July 29, 1999

Dear Mr. Hogan:

Please be advised that the New Jersey Department of Environmental Protection (NJDEP) has completed its review of the above referenced Remedial Action Reports (RARs). The NJDEP's comments regarding the Remedial Action Reports are noted below:

I Soil Comments

1. The NJDEP is currently reviewing the November 23, 1999 Remedial Action Workplan addendum. Comments concerning this workplan will be provided at a later date.

II Ground Water Comments

Water Elevation and LNAPL/DNAPL Monitoring and Recovery

Hexcel continued the temporary water elevation and LNAPL/DNAPL monitoring and recovery program through the second quarter of 1999. Hexcel reports that monitoring of PB1 and PB2 in the basement pit has ceased because the pit has been covered. Hexcel also reports that Napp denied Hexcel access to MW25 and MW31 during the first and second quarters of 1999.

During the four quarters DNAPL was detected in MW6 at up to 0.54 feet in thickness and in CW12 at up to 0.3 feet. A measurable thickness of DNAPL was also detected in MW26 but measurements have not been submitted. DNAPL was detected on the probe at MW8, CW16, RW6-1, RW7-1, RW7-4, RW7-5 and PB2. Hexcel recovered 1 gallon of DNAPL from MW6, 0.1 gallon of DNAPL from RW6-1 and 0.1 gallon of DNAPL from MW26, bringing the total amount of DNAPL recovered since initiation of the temporary recovery program in October 1994 to 29.8 gallons.

During the same four quarters LNAPL was detected in CW7 at up to 0.22 feet in thickness and in MW6 at up to 0.05 feet. LNAPL was detected on the probe only in MW17. Hexcel recovered 0.9 gallon of LNAPL from CW7 and 1.1 gallons from MW6 bringing the total amount of LNAPL recovered since initiation of the temporary program to 11.4 gallons.

Within each quarterly report, Hexcel provides a shallow ground water flow map and a deep ground water flow map. Flow on each is similar to that of previous quarters.

Hexcel proposes to continue performance of the temporary water elevation, LNAPL/DNAPL monitoring and recovery program until implementation of the final remedial plan.

Hexcel also proposes to continue monitoring for recoverable amounts of product using an interface probe. Hexcel explains that when DNAPL is observed on the tip of the probe but the probe does not signal its presence, the probe is not malfunctioning but rather only a film of DNAPL is present. Hexcel believes that the interface probe has been a reliable indicator of recoverable amounts of product. Hexcel explains that previous attempts to recover product from wells where DNAPL had only been observed on the tip of the probe have yielded insignificant product and have been extremely time consuming.

NJDEP Comments:

1. As proposed, Hexcel shall continue performance of the temporary water elevation and LNAPL/DNAPL monitoring and recovery program until implementation of the final remedial plan.

2. As proposed, Hexcel may continue to monitor for recoverable amounts of product using only an interface probe. The NJDEP understands that the probe has not been malfunctioning. The NJDEP's concern was that recoverable DNAPL might be present in a well but might not trigger the interface probe if it were present as globules rather than as a continuous layer. However, based on Hexcel's continuing objection to this requirement and Hexcel's indication that a final remedial plan will be submitted soon, the NJDEP withdraws the requirement that Hexcel check for recoverable product with a bailer or initiate product recovery whenever DNAPL is detected on the probe.

3. The first quarter 1999 report includes a quarterly water elevation and product measurement table for April 1999 rather than for February, 1999. Hexcel shall submit the February, 1999 data.

Ground Water Sampling

Hexcel collected a round of ground water samples in July of 1998 to obtain information necessary for remedial action design as well as to address the NJDEP's requirement for a round of ground water sampling. Hexcel sampled shallow wells MW2 through MW6 even, MW17, MW20 through MW24, MW26, MW27, MW28 and MW33. Hexcel sampled deep wells MW1 through MW15 odd, and MW19. Hexcel had intended to sample MW25 (a well installed by Hexcel on Napp property) and MW-E8 (a well installed by Napp on Napp property) but was denied access by Napp. Samples were analyzed for volatile organic compounds (VOCs) and PCBs.

VOCs were detected in shallow wells at total concentrations ranging up 623,300 parts per billion (ppb). VOCs were detected in deep wells at total concentrations ranging up to 1,893 ppb. VOCs detected above the Ground Water Quality Standards (GWQS) included numerous chlorinated compounds, benzene and toluene.

Compounds detected above 1% solubility in water, in particular, included cis-1,2-dichloroethene, chlorobenzene, 1,2-DCA, tetrachloroethene, TCA, toluene and 1,2-dichlorobenzene. Detections in excess of 1% solubility were limited to shallow wells MW4, MW6, MW8, MW17, MW21, MW26 and MW27.

PCBs were detected in shallow wells at total concentrations ranging up to 150 ppb. PCBs were detected in deep wells at total concentrations of up to 1.5 ppb.

Hexcel concludes that ground water quality in the shallow zone has improved with respect to VOCs, while quality in the lower zone remained the same. Hexcel points out that at well pairs, VOCs in the lower zone were typically two to three orders of magnitude lower than those in the shallow zone.

Hexcel indicates that the information on ground water quality gained by the sampling has been incorporated into the evaluation of the remedial design.

Hexcel believes that the MW-series monitoring wells provide an adequate ground-water quality monitoring network. Hexcel indicates that the CW-series and RW-series wells were not installed for the purpose of testing and that their testing is not necessary for ground-water quality characterization. Hexcel states that sampling and testing of more than 70 on-site wells would be an unreasonable requirement, especially when such testing would not be expected to add significantly to the understanding of ground water conditions. Hexcel indicates that if the NJDEP believed that sampling of a particular CW-series or RW-series well would be valuable for delineation or remediation Hexcel would consider a request for sampling of it.

Hexcel proposes to conduct base neutral and acid extractable organic compounds (BNAs) and priority pollutant metals (PPM) sampling in wells located next to the Saddle River in order to evaluate the potential impact of BNAs and PPMs on the surface water. Hexcel notes that the NJDEP indicated that ground water sampling for BNAs and PPMs would likely be required because of their historic presence in ground water above Surface Water Quality Criteria (SWQC).

Hexcel proposes to sample all shallow monitoring wells plus two control wells next to the Saddle River for BNAs and PPM (MW8, MW10, MW14, MW28, CW11 and CW12.) Hexcel proposes to collect the samples using the low-flow purge method to discount the effect of turbidity on metals concentrations. Additionally, Hexcel proposes to collect both filtered and unfiltered samples for metals analysis to allow further evaluation of the relationship between turbidity and metals concentrations. Hexcel intends to perform this proposed sampling after NJDEP approval.

NJDEP Comments:

4. Hexcel shall submit shallow and deep isoconcentration maps for the 1998 VOC and PCB ground water sampling results. VOC maps shall be constructed for total targeted VOCs as well as for individual VOCs as necessary to clearly illustrate the distribution of GWQS exceedances. All existing monitoring wells, control wells and recovery wells shall be shown on each map. If data is not available for a particular well for the mapped round of sample results, Hexcel shall indicate so directly on the map.

5. Hexcel shall submit the field sampling logs for the 1998 ground water sampling event.

6. The NJDEP acknowledges Hexcel's indication that Napp denied Hexcel access to monitoring wells MW25, MW31 and MW-E8 on occasion during 1998 and 1999. Hexcel shall provide the NJDEP with a copy of Hexcel's request for access and Napp's response.

7. The NJDEP's question regarding the possibility of sampling control wells and recovery wells was not a request for sampling of all these wells. The NJDEP was concerned about Hexcel's apparent indication that sampling of control wells and recovery wells was not possible. The NJDEP understands from Hexcel's response that this is not the case.

8. The NJDEP notes, that VOC concentrations in deep well MW3 were relatively high in 1998. Any increasing concentration trend evident in this well through the course of future sampling would indicate that the silt layer is not an effective barrier to vertical migration of contamination somewhere in the area of the well.

9. In item II.B.3.a of the NJDEP's February 3, 1999 letter, the NJDEP indicated that ground water sampling for BNAs and PPMs would likely be necessary. The NJDEP did not intend to convey that sampling ground water for these parameters would be necessary only in order to determine

whether Hexcel must sample surface water for these parameters. The NJDEP intended to convey that because these parameters had been detected above GWQS and because all site-related contaminants above GWQS must eventually be remediated, Hexcel would need to have accurate information on the occurrence of these contaminants.

At this time, Hexcel must indicate whether the ground water remedial strategy currently planned for the site will remediate BNAs. (Whether remediation of PPMs is necessary remains to be seen as addressed further below.) If Hexcel believes that all BNA exceedances will be remediated, then the NJDEP will allow Hexcel to forego further BNA sampling at this time, other than the proposed BNA sampling along the river. Otherwise, Hexcel must submit a proposal to sample the wells at the site for BNAs so that Hexcel may account for them in the ground water remedial plan. Post-remedial sampling for BNAs will eventually be required at a minimum.

10. Hexcel's proposal to sample MW8, MW10, MW14, MW28, CW11 and CW12 for BNAs and PPMs in order to evaluate the need for in-stream sampling for these parameters is acceptable.

11. The NJDEP allows the use of the low-flow purging and sampling technique in order to determine whether or not metals concentrations detected through conventional sampling are actually representative of mobile contamination (dissolved and colloidal contamination.) However, the NJDEP has not yet developed a specific standard operating procedure or guidance document on this subject. Therefore, pursuant to N.J.A.C. 7:26E-2.1(a)14, low-flow purging and sampling methods must be proposed, reviewed and approved on a case-by-case basis. If Hexcel wishes the NJDEP to entertain a proposal for low-flow purging and sampling for metals, Hexcel must submit the following information:

a. The specific field indicator parameters and the method of their measurement that will be used to assure stabilization of ground water quality during purging. (At this time, the NJDEP is requiring that a minimum of twice the volume of the sampling equipment be purged prior to collection of samples.)

b. The proposed intake depth of the sample collection device and a rationale for it.

c. The proposed purging and sampling pumping rates(s). (Draw-down should not exceed 0.3 feet.)

d. The type of sampling pump.

e. Whether pumps will be dedicated or the method used to decontaminate pumps.

For information on low-flow sampling, Hexcel shall refer to the November 1997 issue of the NJDEP's Site Remediation News ("The Low-Down on Low Flow) and shall refer to <u>EPA Ground Water Issue: Low-flow (Minimal Drawdown) Ground-Water Sampling Procedures</u>, EPA/540/S-95/504, April 1996.

12. As Hexcel is aware, the NJDEP will use only results from unfiltered metals samples to evaluate GWQS exceedances.

13. Hexcel shall submit a discussion of the source(s) of the metals detected above GWQS in ground water.

Horizontal delineation across Molnar Road

Based on the data for MW22, MW23 and MW24, Hexcel concludes that Hexcel's contamination has been adequately delineated to the south. Hexcel believes that ground water quality in these three wells has improved significantly. Hexcel observes that total VO concentration in MW22 decreased from 450 parts per million (ppm) in 1993 to 1 ppm in 1988 and that total VO concentration in MW23 decreased from 24 ppm in 1995 to less than 0.1 ppm in 1998. Hexcel observes that at MW24 the only compound detected in 1998 was chlorobenzene which was below GWQS. Also, Hexcel observes that while it was denied access to sample MW-E8 in 1998, the well contained only 20 ppb total VOCs when it was sampled in January 1997.

NJDEP Comments:

14. The NJDEP believes that a review of the Napp Technologies Inc.'s most recent submittal will be relevant to the evaluation of Hexcel's statement . Therefore, the NJDEP will withhold comments on the need for delineation of VOCs south of Molnar Road until the NJDEP has reviewed Napp's most recent submittal.

Vertical delineation in the area of MW26

Hexcel proposes to advance one boring through the center of former Building 2 to determine whether the silt layer is present under the building. Hexcel believes that the absence of the confining layer in this area is unlikely as it would indicate that the construction fill for the subsurface structure extended through the confining layer.

Hexcel proposes to bore down to the depth of the nearest deep monitoring well (MW7), if necessary, to search for the silt layer. Continuous sampling will be performed for visual inspection and "field screening." If the silt layer is encountered and DNAPL is found in the boring, Hexcel will complete the boring as a shallow well. If the silt layer is encountered but no DNAPL is found in the boring, Hexcel will backfill the borehole. If the silt layer is not encountered, Hexcel will assume that the silt layer is not present and will complete the boring as a deep well, similar in elevation to MW7.

NJDEP Comments:

15. Hexcel's proposal to advance a single boring under the center of Building 2 to investigate the topography of the silt layer under the building and the extent of any DNAPL accumulation on top of it is inadequate. If an excavation is present in the silt as suspected by Hexcel, and the excavation is almost as large as Building 2 as Hexcel suggested in the previously submitted cross section, then one boring should not be expected to define the topography of the silt and the extent of DNAPL above it. The NJDEP would also disagree that the center point under the building should be assumed to be the lowest point in the excavation. Moreover, the topography of the clay may not to be related to excavation under Building 2 at all.

Hexcel shall advance one boring immediately adjacent MW26 and shall advance additional borings outward from MW26 until the topography of the silt layer has been defined. Hexcel's goal must be to define the topography of the silt layer over the area circumscribed by the wells nearest MW26 in which the silt layer has been logged, including the entire, potentially excavated area under Building 2.

Hexcel shall advance each borehole to the silt layer or to the depth of MW7, whichever comes first, as proposed. When performing the proposed visual inspection and field screening, special attention shall be paid to the material directly above the concrete basin as well as above the silt.

16. If the silt layer is encountered Hexcel shall install, or propose installation of, monitoring wells directly above the silt at representative locations whether DNAPL is observed in the soil borings

or not; visual inspection and field screening may not be sufficient to identify DNAPL. If the silt layer is not encountered, Hexcel shall install, or propose installation of, additional monitoring wells at representative locations at the depth of MW7 to investigate the vertical extent of contamination.

Hexcel shall submit the revised boring location proposal before proceeding with the work.

Vertical delineation near MW1

Hexcel proposes to install a bedrock well for vertical delineation of contamination in the area of MW1 after shallow contamination in that area has been remediated. Hexcel is concerned about creating a pathway for vertical migration of contamination.

NJDEP Comments:

17. Hexcel's proposal to conduct an investigation of bedrock ground water quality in the area of MW1 after the overburden in this area has been remediated is conceptually acceptable, given that the NJDEP understands that a remedial plan will be submitted soon and that remediation of overburden in this area is not expected to be a long-term process. Hexcel shall submit a tentative schedule for completion of this bedrock investigation.

Migration of DNAPL under Saddle River

During the fourth quarter of 1998, Hexcel conducted an investigation of soil quality beneath the Saddle River next to MW8. Hexcel advanced nine borings through the stream bed to depths of approximately 6.5 feet to 7 feet below the bed. Hexcel reports that all but two of the borings, which were not advanced deep enough, reached the silt layer. A soil core was recovered from each boring and was field-screened with a PID. Hexcel reports that one sample was collected from each core based on the PID readings and was analyzed for VO+15.

Chlorobenzene was detected in three of the samples at 1.8 ppm, 4.8 ppm and 5.3 ppm, each above the 1 ppm IGWSCC for chlorobenzene as Hexcel points out. Relatively low levels of benzene, vinyl chloride, cis-1,2-DCE and toluene were also detected among the samples. Hexcel concludes that the results indicate no significant impact to the soils due to the on-site soil and ground water contamination.

Hexcel also submits the results of ground water sampling performed by the Army Corps of Engineers at monitoring well MW08 as well as at other wells. Hexcel indicates that the results were already submitted to the NJDEP in the October 27, 1995 report. According to the results table, with respect to VOCs, MW8 contained 3 ppb total 1,2-DCE.

NJDEP Comments:

18. The NJDEP will consider using the results of the soil investigation performed under Saddle River for delineation of DNAPL in the area of MW8. Hexcel shall submit the soil boring logs and the field screening results.

Surface Water Sampling

Hexcel proposes to sample the Saddle River at five locations rather than at seven as required by the NJDEP. Hexcel proposes to collect three samples in the vicinity of MW8, spaced 100 feet apart from each other, plus one sample near the up-stream property boundary and one sample at the down-stream property boundary. Hexcel believes that based on the results of the stream boring investigation this sampling frequency is more than adequate for evaluating impacts to surface water. Hexcel believes that collection of samples at the required frequency of one per 60 feet is not necessary.

Hexcel proposes to analyze the samples for VO+15 and PCBs. Hexcel indicates that the need to include BNAs and PPMs in the analyses will be based on the results of the proposed ground water sampling for these parameters.

Hexcel indicates that the surface water sampling will be performed upon the NJDEP's approval of the proposed sampling locations and the proposed ground water sampling, as well evaluation of the ground water sampling results.

Hexcel also indicates that pursuant to the Technical Rules for Site Remediation, it will conduct a baseline ecological evaluation following the evaluation of the surface water sampling results.

NJDEP Comments:

19. Hexcel's proposed surface water sampling locations are not acceptable. Hexcel shall sample surface water in the locations required by the NJDEP in item II.B.4.b. of the NJDEP's February 3, 1999 letter.

20. Hexcel's proposal to base the need for BNA and PPM sampling in surface water on the results of BNA and PPM sampling at MW8, MW10, MW14, MW28, CW11 and CW12 for BNAs and PPMs is acceptable.

Basement Seepage and Ground Water Treatment System

Hexcel reports that it has stopped recovering and treating basement seepage water because Fine Organics has vacated the property. Hexcel intended to use the treatment system for pilot testing associated with remedial planning.

NJDEP Comments:

21. The NJDEP understands that the floor of the Building 1 basement sits above or within the silt layer that extends under the site. Hexcel shall clarify whether the basement seepage historically recovered from the basement of Building 1 collected on the floor of the basement or collected within a pit set into the floor of the basement. If the seepage collected within a pit set into the floor of the basement, Hexcel shall indicate the depth of the pit below the basement floor. Basement seepage historically contained product and the NJDEP wants to confirm whether Hexcel should assume that all product that entered the basement originated above the silt layer.

III General Requirements

1. Hexcel shall submit the results or additional work plans, in triplicate. Please note that only one copy of the Quality Assurance/Quality Control Deliverables is needed.

2. Hexcel shall submit a revised Remedial Action Schedule, pursuant to N.J.A.C. 7:26E-6.5, for NJDEP approval which includes all tasks associated with the remediation of the site within thirty (30) calendar days of the receipt of this letter.

3. Hexcel shall submit summarized analytical results in accordance with the Technical Requirements For Site Remediation (TRSR), N.J.A.C. 7:26E.

4. Hexcel shall collect and analyze all samples in accordance with the sampling protocol outlined in the May, 1992 edition of the NJDEP's "Field Sampling Procedures Manual" and the TRSR, N.J.A.C. 7:26E.

5. Hexcel shall notify the assigned BEECRA Case Manager at least 14 calendar days prior to implementation of all field activities included in the Remedial Action Workplan. If Hexcel fails to initiate sampling within 30 calendar days of the receipt of this approval, any requests for an extension of the required time frames may be denied.

6. Pursuant to the TRSR, N.J.A.C. 7:26E-3.13(c)3v, all analytical data shall be presented both as a hard copy and an electronic deliverable using the database format outlined in detail in the current HAZSITE application or appropriate spreadsheet format specified in the NJDEP's electronic data interchange manual.

For further information related to electronic data submissions, please refer to the Site Remediation Program's (SRP's) home page at the following internet address: **http://www.state.nj.us/dep/srp.** The **Regulations and Guidance** page of this web site has a section dedicated to HazSite which includes downloadable files, an explanation of how to use these files to comply with the NJDEP's requirements, the SRP's Electronic Data Interchange (EDI) manual, and **Guidance for the Submission and Use of Data In GIS Compatible Formats Pursuant to "Technical Requirements for Site Remediation".**

7. Pursuant to N.J.S.A. 58:10B-3, a remediation funding source is to be established in an amount equal to or greater than the cost estimate of the implementation of the remediation and shall be in effect for a term not less than the actual time necessary to perform the remediation at the site. N.J.S.A. 58:10B-3 allows for a change of the amount in the remediation funding source as the cost estimate changes. Please provide the current estimated cost of the remaining remediation required at the site. Any increases in the estimated cost will require an increase in the amount in the Remediation Funding Source to an amount at least equal to the new estimate. Any requests to decrease the amount in the remediation funding source will be reviewed and approved by the NJDEP upon a finding that the current remediation cost estimate will be sufficient to fund all necessary remediation.

If you have any questions, please contact the Case Manager, Joseph J. Nowak, at (609) 292-0130.

Sincerely,

Michael A. Justiniano, Supervisor
Bureau of Environmental Evaluation,
Cleanup and Responsibility Assessment

c: Kris Geller, BEERA
Beverly Phillips, BGWPA
A. William Nosil, Hexcel Corporation
James Higdon, Fine Organics Corporation
Steve Tiffinger, Bergen County Department of Health Services
Gary Paparozzi, Mayor, Borough of Lodi
Stephen Lo Iacono, Jr., Lodi Municipal Manager
Joseph Savarese, Haley & Aldrich

Appendix B

Groundwater Field Sampling Report (July 1998 Sampling Event)

Monitoring Well Data

Client: Haley & Aldrich Project: Hexcel Facility/Lodi

Job No: F988 Date Sampled: 7/30/98 Analyst: R. Toogood

Well ID	MW11	MW10	MW20	MW1	MW17	MW4	MW5
Depth to Water From TOC feet (before purging)	10.50	12.78	5.43	10.37	9.62	8.14	11.62
Depth to Water From TOC feet (after purging)	11.37	14.41	Dry	18.74	12.55	Dry	15.46
Depth to Water From TOC feet (before sampling)	10.68	13.82	13.51	13.83	10.35	9.11	12.05
Depth to Bottom From TOC feet	33.47	16.79	20.07	23.53	14.09	9.89	28.86
PID Reading from Well Casing (ppm)	0.0	0.0	0.0	0.0	35.0	180.0	0.0
pH before Purge	6.92	6.23	6.13	6.51	5.23	6.68	6.86
Temp. before Purge (°C)	18.5	19.9	19.8	21.2	24.3	20.5	20.6
Diss. Oxygen before Purge (ppm)	1.0	0.7	3.3	1.1	0.4	2.6	1.2
Cond. before Purge (umhos/cm)	710	1600	480	550	1820	1050	900
Water Volume in Well (gal.)	15.0	2.61	9.55	8.59	2.92	1.14	11.25
Purge Method	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump
Purge Start Time	8:11	8:42	9:37	10:19	10:22	11:38	11:38
Purge End Time	8:52	9:19	10:00	11:06	10:41	11:48	12:11
Purge Rate (gpm)	1.1	0.2	0.4	0.6	0.5	0.1	1.0
Volume Purged (gal.)	45	8	9	26	9	4	34
pH after Purge	6.97	6.29	6.27	6.42	5.84	6.39	6.57
Temp. after Purge (°C)	16.7	23.0	17.2	18.9	20.8	25.2	17.8
Diss. Oxygen after Purge (ppm)	1.2	1.2	3.1	1.2	0.3	1.2	1.2
Cond. after Purge (umhos/cm)	700	1750	490	500	1600	1100	800
pH at Sample	6.95	6.44	6.21	6.47	5.90	6.37	7.02
Temp. at Sample (°C)	17.7	17.4	17.0	19.0	20.2	24.3	19.8
Diss. Oxygen at Sample (ppm)	1.4	0.9	3.2	1.6	0.3	0.8	0.8
Cond. at Sample (umhos/cm)	700	1750	480	500	1600	1100	850
Sampling Method	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer
Time of Sampling	9:10	9:22	11:21	11:16	11:10	13:46	12:21

Monitoring Well Data

Well ID	MW27	MW26	MW21	MW33	MW19	MW14	MW15
Depth to Water From TOC feet (before purging)	7.40	7.60	8.94	10.07	7.58	17.80	9.41
Depth to Water From TOC feet (after purging)	10.99	Dry	Dry	10.48	8.14	Dry	15.25
Depth to Water From TOC feet (before sampling)	10.12	14.46	9.61	10.10	7.68	11.21	11.41
Depth to Bottom From TOC feet	12.52	17.94	15.14	16.98	26.61	15.60	25.62
PID Reading from Well Casing (ppm)	2000.0	20.0	0.0	0.0	0.0	0.0	0.0
pH before Purge	6.61	7.10	6.52	6.54	7.19	6.66	10.53
Temp. before Purge (°C)	23.3	22.6	22.0	21.1	21.4	23.7	22.0
Diss. Oxygen before Purge (ppm)	0.3	1.0	0.6	1.0	1.5	0.7	3.6
Cond. before Purge (umhos/cm)	1800	1700	1400	800	575	900	600
Water Volume in Well (gal.)	3.34	1.68	4.04	4.51	12.42	2.48	10.58
Purge Method	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump
Purge Start Time	11:55	12:50	13:11	13:08	14:05	15:28	15:27
Purge End Time	12:09	12:55	13:29	13:25	14:41	15:39	16:15
Purge Rate (gpm)	0.7	0.3	0.5	0.8	1.1	0.4	0.7
Volume Purged (gal.)	11	1.75	9.5	14	38	4	32
pH after Purge	6.62	7.26	6.77	6.60	6.74	6.44	7.49
Temp. after Purge (°C)	20.8	19.7	20.7	19.8	17.9	21.3	18.7
Diss. Oxygen after Purge (ppm)	0.3	3.3	0.9	0.7	0.9	1.3	0.8
Cond. after Purge (umhos/cm)	2000	1600	2400	850	600	800	610
pH at Sample	6.59	7.27	6.42	6.58	6.99	6.35	7.64
Temp. at Sample (°C)	18.2	20.4	21	21.8	20.1	20.2	17.9
Diss. Oxygen at Sample (ppm)	0.3	1.4	0.8	1.4	1.8	2.4	1.1
Cond. at Sample (umhos/cm)	2000	1600	1050	1000	600	750	600
Sampling Method	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer
Time of Sampling	12:16	14:55	15:10	13:36	14:47	17:37	16:23

Monitoring Well Data

Well ID	MW22	MW23	MW24
Depth to Water From TOC feet (before purging)	6.00	4.78	4.11
Depth to Water From TOC feet (after purging)	Dry	5.16	Dry
Depth to Water From TOC feet (before sampling)	7.51	4.92	7.06
Depth to Bottom From TOC feet	8.26	9.64	9.67
PID Reading from Well Casing (ppm)	130.0	1.0	0.0
pH before Purge	5.39	6.28	6.69
Temp. before Purge (°C)	25.9	26.8	24.2
Diss. Oxygen before Purge (ppm)	1.5	0.8	0.5
Cond. before Purge (umhos/cm)	220	700	500
Water Volume in Well (gal.)	1.47	3.17	3.63
Purge Method	Peristaltic pump	Peristaltic pump	Peristaltic pump
Purge Start Time	17:17	16:44	16:46
Purge End Time	17:31	17:05	17:10
Purge Rate (gpm)	0.1	0.5	0.3
Volume Purged (gal.)	1.2	10	7
pH after Purge	5.47	6.27	6.55
Temp. after Purge (°C)	25.7	25.3	21.8
Diss. Oxygen after Purge (ppm)	0.9	0.7	0.8
Cond. after Purge (umhos/cm)	240	800	1200
pH at Sample	5.57	6.27	6.52
Temp. at Sample (°C)	23.4	25.0	21.1
Diss. Oxygen at Sample (ppm)	1.1	0.8	1.2
Cond. at Sample (umhos/cm)	340	800	1500
Sampling Method	Teflon bailer	Teflon bailer	Teflon bailer
Time of Sampling	18:07	17:26	17:56

Monitoring Well Data

Client: Haley & Aldrich Project: Hexcel Facility/Lodi

Job No: F990 Date Sampled: 7/31/98 Analyst: R. Toogood

Well ID	MW12	MW13	MW28	MW6	MW7	MW8	MW9
Depth to Water From TOC feet (before purging)	11.02	10.05	10.64	10.40	9.95	11.88	9.12
Depth to Water From TOC feet (after purging)	Dry	12.57	11.25	12.74	10.64	13.13	10.50
Depth to Water From TOC feet (before sampling)	13.34	10.53	10.89	11.64	10.02	12.19	9.32
Depth to Bottom From TOC feet	17.22	33.22	14.82	18.35	32.86	17.36	29.59
PID Reading from Well Casing (ppm)	0.0	0.0	0.0	70.0	1.0	8.0	2.0
pH before Purge	5.42	7.19	6.26	6.74	7.37	5.89	7.37
Temp. before Purge (°C)	19.3	20.1	21.8	19.4	19.8	19.5	17.7
Diss. Oxygen before Purge (ppm)	1.6	2.5	0.7	0.7	2.9	1.0	0.9
Cond. before Purge (umhos/cm)	250	800	900	1000	800	800	600
Water Volume in Well (gal.)	4.04	15.13	2.74	5.19	14.95	3.58	13.36
Purge Method	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump	Peristaltic pump
Purge Start Time	7:57	7:55	8:18	9:25	9:23	10:36	10:35
Purge End Time	8:08	8:47	8:57	10:15	10:05	11:08	11:11
Purge Rate (gpm)	0.4	0.9	0.2	0.3	1.1	0.3	1.1
Volume Purged (gal.)	4.5	46	9	116	45	11	41
pH after Purge	5.32	7.13	6.34	6.32	6.57	5.93	6.64
Temp. after Purge (°C)	18.8	18.1	21.6	18.9	18.1	19.3	17.3
Diss. Oxygen after Purge (ppm)	1.7	1.8	2.0	0.9	0.8	0.4	0.6
Cond. after Purge (umhos/cm)	245	700	900	1000	700	1100	600
pH at Sample	5.46	7.20	6.28	6.32	7.70	6.09	6.73
Temp. at Sample (°C)	18.9	18.2	21.6	19.2	19.3	18.8	17.7
Diss. Oxygen at Sample (ppm)	1.3	1.1	0.6	2.0	3.2	0.6	1.0
Cond. at Sample (umhos/cm)	240	700	900	1000	700	1200	600
Sampling Method	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer	Teflon bailer
Time of Sampling	9:10	8:52	9:02	10:21	10:10	11:26	11:18

Monitoring Well Data

Well ID	MW16	MW3	MW2
Depth to Water From TOC feet (before purging)	7.35	10.63	8.20
Depth to Water From TOC feet (after purging)	11.08	11.67	Dry
Depth to Water From TOC feet (before sampling)	10.34	10.82	9.04
Depth to Bottom From TOC feet	12.65	30.78	10.26
PID Reading from Well Casing (ppm)	0.0	12.0	2.0
pH before Purge	7.34	10.67	5.86
Temp. before Purge (°C)	21.4	19.8	21.8
Diss. Oxygen before Purge (ppm)	2.5	1.1	2.2
Cond. before Purge (umhos/cm)	500	700	140
Water Volume in Well (gal.)	3.45	13.15	1.34
Purge Method	Peristaltic pump	Peristaltic pump	Peristaltic pump
Purge Start Time	11:38	12:18	12:01
Purge End Time	12:22	13:04	12:10
Purge Rate (gpm)	0.3	0.9	0.2
Volume Purged (gal.)	11	40	1.5
pH after Purge	7.53	6.54	5.68
Temp. after Purge (°C)	21.1	18.3	21.9
Diss. Oxygen after Purge (ppm)	2.7	0.9	2.1
Cond. after Purge (umhos/cm)	500	700	140
pH at Sample	7.44	7.96	5.81
Temp. at Sample (°C)	20.9	18.8	21.9
Diss. Oxygen at Sample (ppm)	1.0	0.1	1.6
Cond. at Sample (umhos/cm)	500	700	150
Sampling Method	Teflon bailer	Teflon bailer	Teflon bailer
Time of Sampling	12:32	13:12	13:22

Appendix C

Copies of Correspondences Requesting Access to Napp Property for Well Sampling

UNDERGROUND
ENGINEERING &
ENVIRONMENTAL
SOLUTIONS

Haley & Aldrich, Inc.
150 Mineral Spring Drive
Dover, NJ 07801-1635
Tel: 973.361.3600
Fax: 973.361.3800
E-mail: NEW@HaleyAldrich.c

HALEY &
ALDRICH

11 August 1998
File No. 74167-004

COPY

Napp Technologies, Inc.
299 Market Street
Saddle Brook, NJ 07663

Attention: Robert Loewenstein

Subject: Data from Hexcel Wells MW-25 and MW-31

Dear Mr. Loewenstein:

Enclosed please find the water level data collected 16 July 1998 from MW-25 and MW-31, the Hexcel Corporation (Hexcel) wells located on the Napp Technologies, Inc. (Napp) property. We have been forwarding the water level data collected quarterly for these wells to you, in accordance with the Site Access Agreement between Hexcel and Napp. During our recent efforts to obtain access to one of these wells for sampling, we were informed by Mr. Norman Spindel that the access agreement was no longer valid. Nevertheless, we are providing the information to you in a good faith effort of cooperation.

Sincerely yours,
HALEY & ALDRICH, INC.

Sunila Gupta

Sunila Gupta
Project Engineer

C: A. William Nosil
Edward A. Hogan
enclosure

SG\III\74167h08

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ENGINEERING &
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Haley & Aldrich, Inc.
150 Mineral Spring Drive
Dover, NJ 07801-1635
Tel: 973.361.3600
Fax: 973.361.3800
E-mail: NEW@HaleyAldrich.com

21 July 1998
File No. 74167-004

COPY

HALEY & ALDRICH

Napp Technologies, Inc.
299 Market Street
Saddle Brook, NJ 07663

Attention: Robert Loewenstein

Subject: Request for Access
Hexcel Monitoring Wells and Request to Sample Napp Well
Lodi, New Jersey

Dear Mr. Loewenstein:

In accordance with the access agreement between Hexcel Corporation (Hexcel) and Napp Technologies, Inc. (Napp), we are writing to provide a written notice for sampling a monitoring well installed by Hexcel on Napp property. Specifically, we request access to sample MW-25 on 30 July 1998. We have also scheduled sampling of some of the wells installed in Molnar Road (MW-22, MW-23 and MW-24) on the same day.

We also request permission to sample one of the monitoring wells installed by Napp. We would like to collect a groundwater sample from MW-E8 on 30 July 1998 for analyses of Volatile Organic and Polychlorinated Biphenyl parameters.

We will provide you with the analytical data for MW-25 when they are available. We will also provide you with the analytical data for sampling conducted for MW-E8.

We appreciate your assistance in this matter. Unless we hear otherwise, we will assume that the timing of sampling MW-25 is acceptable to you and that we will be able to access the well on 30 July 1998 for sampling purposes. We will call you next week for your response regarding MW-E8. Meanwhile, please call us if you have any questions or need additional information.

Sincerely yours,
HALEY & ALDRICH, INC.

Sunila Gupta
Sunila Gupta
Staff Engineer

Joseph G. Savarese
Project Manager

C: A. William Nosil
E. Hogan, Esq.

SG\JGS\lll\74167h05

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Appendix D

1) **Proposal for Low-Flow Purging and Sampling of Monitoring Wells**

2) **EPA Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling, Final SOP, 16 March 1998.**

Appendix D
Information for Low-Flow Purging and Sampling Proposal

Based on NJDEP's 14 December 1999 letter, this Appendix provides the information requested for NJDEP's review and approval of a low-flow purging and sampling of the monitoring wells for metals. All low-flow sampling will be conducted in accordance with the *Final GW Sampling Standard Operating Procedure, Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling, March 1998.*

1) *The specific field parameters and the method of their measurement that will be used to assure stabilization of groundwater quality during purging. (At this time, the NJDEP is requiring that a minimum of twice the volume of the sampling equipment be purged prior to collection of samples).*

   The specific parameters that will be measured during the low-flow purging procedure will include measurements of pH, temperature, dissolved oxygen, redox potential and conductivity using a flow-through cell and measurements for turbidity using a turbidity meter. In accordance with the EPA procedure, the well will be considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows:
   ±0.1 for pH, ±3% for conductivity, ±10mV for redox potential, and ±10% for dissolved oxygen and turbidity.
   At a minimum, the volume purged will be at least twice the volume of the sampling equipment (minimum purge volume requirement from NJDEP).

2) *The proposed intake depth of the sample collection device and rationale for it.*

   Due to the short screen lengths (≤ 10 feet) of the monitoring wells that are proposed to be sampled for metals, we propose to set target depth at the mid-point of the saturated screen length for each well.

3) *The proposed purging and sampling rates.*

   The EPA procedure will be followed for the purging and sampling rates. Specifically, the well will be pumped at a rate between 100 to 500 milliliters per minute (ml/min) so that a steady flow rate is maintained without exceeding a 0.3 feet drawdown in the well.

4) *The type of sampling pump.*

   NJDEP has approved a proposal for sampling wells CW-11, CW-12, MW-8, MW-10, MW-14 and MW-28 for semi-volatiles (SVOCs) and metals. If only metals are sampled for at the time of the testing, a peristaltic pump with dedicated tubing will be used for the low-flow purging and sampling procedures. If both SVOCs and metals are scheduled to be sampled at the same time, a centrifugal pump will be utilized.

5) *Whether pumps will be dedicated or the method used to decontaminate pumps.*

   In the event that a centrifugal pump is utilized for purging and sampling procedures, it will not be dedicated. EPA procedures for "daily-decon" and "between-well decon" will be used.

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II

GROUND WATER SAMPLING PROCEDURE
LOW STRESS (Low Flow) PURGING AND SAMPLING

I. SCOPE & APPLICATION

This Low Stress (or Low-Flow) Purging and Sampling Procedure is the EPA Region II standard method for collecting low stress (low flow) ground water samples from monitoring wells. Low stress Purging and Sampling results in collection of ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by minimizing stress on the geological formation and minimizing disturbance of sediment that has collected in the well. The procedure applies to monitoring wells that have an inner casing with a diameter of 2.0 inches or greater, and maximum screened intervals of ten feet unless multiple intervals are sampled. The procedure is appropriate for collection of ground water samples that will be analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and microbiological and other contaminants in association with all EPA programs.

This procedure does not address the collection of light or dense non-aqueous phase liquids (LNAPL or DNAPL) samples, and should be used for aqueous samples only. For sampling NAPLs, the reader is referred to the following EPA publications: DNAPL Site Evaluation (Cohen & Mercer, 1993) and the RCRA Ground-Water Monitoring: Draft Technical Guidance (EPA/530-R-93-001), and references therein.

II. METHOD SUMMARY

The purpose of the low stress purging and sampling procedure is to collect ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by setting the intake velocity of the sampling pump to a flow rate that limits drawdown inside the well casing.

Sampling at the prescribed (low) flow rate has three primary benefits. First, it minimizes disturbance of sediment in the bottom of the well, thereby producing a sample with low turbidity (i.e., low concentration of suspended particles). Typically, this saves time and analytical costs by eliminating the need for collecting and analyzing an additional filtered sample from the same well. Second, this procedure minimizes aeration of the ground water during sample collection, which improves the sample quality for VOC analysis. Third, in most cases the procedure significantly reduces the volume of ground water purged from a well and the costs associated with its proper treatment and disposal.

III. ADDRESSING POTENTIAL PROBLEMS

Problems that may be encountered using this technique include a) difficulty in sampling wells with insufficient yield; b) failure of one or more key indicator parameters to stabilize; c) cascading of water and/or formation of air bubbles in the tubing; and d) cross-contamination between wells.

Insufficient Yield

Wells with insufficient yield (i.e., low recharge rate of the well) may dewater during purging. Care should be taken to avoid loss of pressure in the tubing line due to dewatering of the well below the level of the pump's intake. Purging should be interrupted before the water level in the well drops below the top of the pump, as this may induce cascading of the sand pack. Pumping the well dry should therefore be avoided to the extent possible in all cases. Sampling should commence as soon as the volume in the well has recovered sufficiently to allow collection of samples. Alternatively, ground water samples may be obtained with techniques designed for the unsaturated zone, such as lysimeters.

Failure to Stabilize Key Indicator Parameters

If one or more key indicator parameters fails to stabilize after 4 hours, one of three options should be considered: a) continue purging in an attempt to achieve stabilization; b) discontinue purging, do not collect samples, and document attempts to reach stabilization in the log book; c) discontinue purging, collect samples, and document attempts to reach stabilization in the log book; or d) Secure the well, purge and collect samples the next day (preferred). The key indicator parameter for samples to be analyzed for VOCs is dissolved oxygen. The key indicator parameter for all other samples is turbidity.

Cascading

To prevent cascading and/or air bubble formation in the tubing, care should be taken to ensure that the flow rate is sufficient to maintain pump suction. Minimize the length and diameter of tubing (i.e., 1/4 or 3/8 inch ID) to ensure that the tubing remains filled with ground water during sampling.

Cross-Contamination

To prevent cross-contamination between wells, it is strongly recommended that dedicated, in-place pumps be used. As an alternative, the potential for cross-contamination can be reduced by performing the more thorough "daily" decontamination procedures between sampling of each well in addition to the start of each sampling day (see Section VII, below).

Equipment Failure

Adequate equipment should be on-hand so that equipment failures do not adversely impact sampling activities.

IV. PLANNING DOCUMENTATION AND EQUIPMENT

- Approved site-specific Field Sampling Plan/Quality Assurance Project Plan (QAPP). This plan must specify the type of pump and other equipment to be used. The QAPP must also specify the depth to which the pump intake should be lowered in each well. Generally, the target depth will correspond to the mid-point of the most permeable zone in the screened interval. Borehole geologic and geophysical logs can be used to help select the most permeable zone. However, in some cases, other criteria may be used to select the target depth for the pump intake. In all cases, the target depth must be approved by the EPA hydrogeologist or EPA project scientist.

- Well construction data, location map, field data from last sampling event.

- Polyethylene sheeting.

- Flame Ionization Detector (FID) and Photo Ionization Detector (PID).

- Adjustable rate, positive displacement ground water sampling pump (e.g., centrifugal or bladder pumps constructed of stainless steel or Teflon). A peristaltic pump may only be used for inorganic sample collection.

- Interface probe or equivalent device for determining the presence or absence of NAPL.

- Teflon or Teflon-lined polyethylene tubing to collect samples for organic analysis. Teflon or Teflon-lined polyethylene, PVC, Tygon or polyethylene tubing to collect samples for inorganic analysis. Sufficient tubing of the appropriate material must be available so that each well has dedicated tubing.

- Water level measuring device, minimum 0.01 foot accuracy, (electronic preferred for tracking water level drawdown during all pumping operations).

- Flow measurement supplies (e.g., graduated cylinder and stop watch or in-line flow meter).

- Power source (generator, nitrogen tank, etc.).
- Monitoring instruments for indicator parameters. Eh and dissolved oxygen must be monitored in-line using an instrument with a continuous readout display. Specific conductance, pH, and temperature may be monitored either in-line or using separate probes. A nephalometer is used to measure turbidity.

- Decontamination supplies (see Section VII, below).

- Logbook (see Section VIII, below).

- Sample bottles.
- Sample preservation supplies (as required by the analytical methods).
- Sample tags or labels, chain of custody.

V. SAMPLING PROCEDURES

Pre-Sampling Activities

1. Start at the well known or believed to have the least contaminated ground water and proceed systematically to the well with the most contaminated ground water. Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations.
2. Lay out sheet of polyethylene for placement of monitoring and sampling equipment.
3. Measure VOCs at the rim of the unopened well with a PID and FID instrument and record the reading in the field log book.
4. Remove well cap.
5. Measure VOCs at the rim of the opened well with a PID and an FID instrument and record the reading in the field log book.
6. If the well casing does not have a reference point (usually a V-cut or indelible mark in the well casing), make one. Note that the reference point should be surveyed for correction of ground water elevations to the mean geodesic datum (MSL).
7. Measure and record the depth to water (to 0.01 ft) in all wells to be sampled prior to purging. Care should be taken to minimize disturbance in the water column and dislodging of any particulate matter attached to the sides or settled at the bottom of the well.
8. If desired, measure and record the depth of any NAPLs using an interface probe. Care should be taken to minimize disturbance of

any sediment that has accumulated at the bottom of the well. Record the observations in the log book. If LNAPLs and/or DNAPLs are detected, install the pump at this time, as described in step 9, below. Allow the well to sit for several days between the measurement or sampling of any DNAPLs and the low-stress purging and sampling of the ground water.

Sampling Procedures

9. Install Pump: Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well in the EPA-approved QAPP or a depth otherwise approved by the EPA hydrogeologist or EPA project scientist. The pump intake must be kept at least two (2) feet above the bottom of the well to prevent disturbance and resuspension of any sediment or NAPL present in the bottom of the well. Record the depth to which the pump is lowered.

10. Measure Water Level: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

11. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

12. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):

±0.1 for pH
±3% for specific conductance (conductivity)
±10 mv for redox potential
±10% for DO and turbidity

Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

13. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

    Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Ground water purged from the well prior to sampling can be used for this purpose.

14. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.

15. Measure and record well depth.

16. Close and lock the well.

VI. FIELD QUALITY CONTROL SAMPLES

Quality control samples must be collected to determine if sample collection and handling procedures have adversely affected the quality of the ground water samples. The appropriate EPA Program Guidance should be consulted in preparing the field QC sample requirements of the site-specific QAPP.

All field quality control samples must be prepared exactly as regular investigation samples with regard to sample volume, containers, and preservation. The following quality control samples should be collected during the sampling event:

- Field duplicates
- Trip blanks for VOCs only.
- Equipment blank (not necessary if equipment is dedicated to the well)

As noted above, ground water samples should be collected systematically from wells with the lowest level of contamination through to wells with highest level of contamination. The equipment blank should be collected after sampling from the most contaminated well.

VII. DECONTAMINATION

Non-disposable sampling equipment, including the pump and support cable and electrical wires which contact the sample, must be decontaminated thoroughly each day before use ("daily decon") and after each well is sampled ("between-well decon"). Dedicated, in-place pumps and tubing must be thoroughly decontaminated using "daily decon" procedures (see #17, below) prior to their initial use. For centrifugal pumps, it is strongly recommended that non-disposable sampling equipment, including the pump and support cable and electrical wires in contact with the sample, be decontaminated thoroughly each day before use ("daily decon").

EPA's field experience indicates that the life of centrifugal pumps may be extended by removing entrained grit. This also permits inspection and replacement of the cooling water in centrifugal pumps. All non-dedicated sampling equipment (pumps, tubing, etc.) must be decontaminated after each well is sampled ("between-well decon," see #18 below).

17. <u>Daily Decon</u>

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Disassemble pump.

E) Wash pump parts: Place the disassembled parts of the pump into a deep basin containing 8 to 10 gallons of non-phosphate detergent solution. Scrub all pump parts with a test tube brush.

F) Rinse pump parts with potable water.

G) Rinse the following pump parts with distilled/ deionized water: inlet screen, the shaft, the suction interconnector, the motor lead assembly, and the stator housing.

H) Place impeller assembly in a large glass beaker and rinse with 1% nitric acid (HNO_3).

I) Rinse impeller assembly with potable water.

J) Place impeller assembly in a large glass bleaker and rinse with isopropanol.

K) Rinse impeller assembly with distilled/deionized water.

18. Between-Well Decon

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Final Rinse: Operate pump in a deep basin of distilled/deionized water to pump out 1 to 2 gallons of this final rinse water.

VIII. FIELD LOG BOOK

A field log book must be kept each time ground water monitoring activities are conducted in the field. The field log book should document the following:

- Well identification number and physical condition.
- Well depth, and measurement technique.
- Static water level depth, date, time, and measurement technique.
- Presence and thickness of immiscible liquid layers and detection method.
- Collection method for immiscible liquid layers.
- Pumping rate, drawdown, indicator parameters values, and clock time, at three to five minute intervals; calculate or measure total volume pumped.
- Well sampling sequence and time of sample collection.
- Types of sample bottles used and sample identification numbers.
- Preservatives used.
- Parameters requested for analysis.
- Field observations of sampling event.
- Name of sample collector(s).
- Weather conditions.
- QA/QC data for field instruments.

IX. REFERENCES

Cohen, R.M. and J.W. Mercer, 1993, DNAPL Site Evaluation, C.K. Smoley Press, Boca Raton, Florida.

Puls, R.W. and M.J. Barcelona, 1996, Low-Flow (Minimal Drawdown) Ground-water Sampling Procedures, EPA/540/S-95/504.

U.S. EPA, 1993, RCRA Ground-Water Monitoring: Draft Technical Guidance, EPA/530-R-93-001.

U.S. EPA Region II, 1989, CERCLA Quality Assurance Manual.

Appendix E

Boring Logs for Stream-Bed Investigation Borings

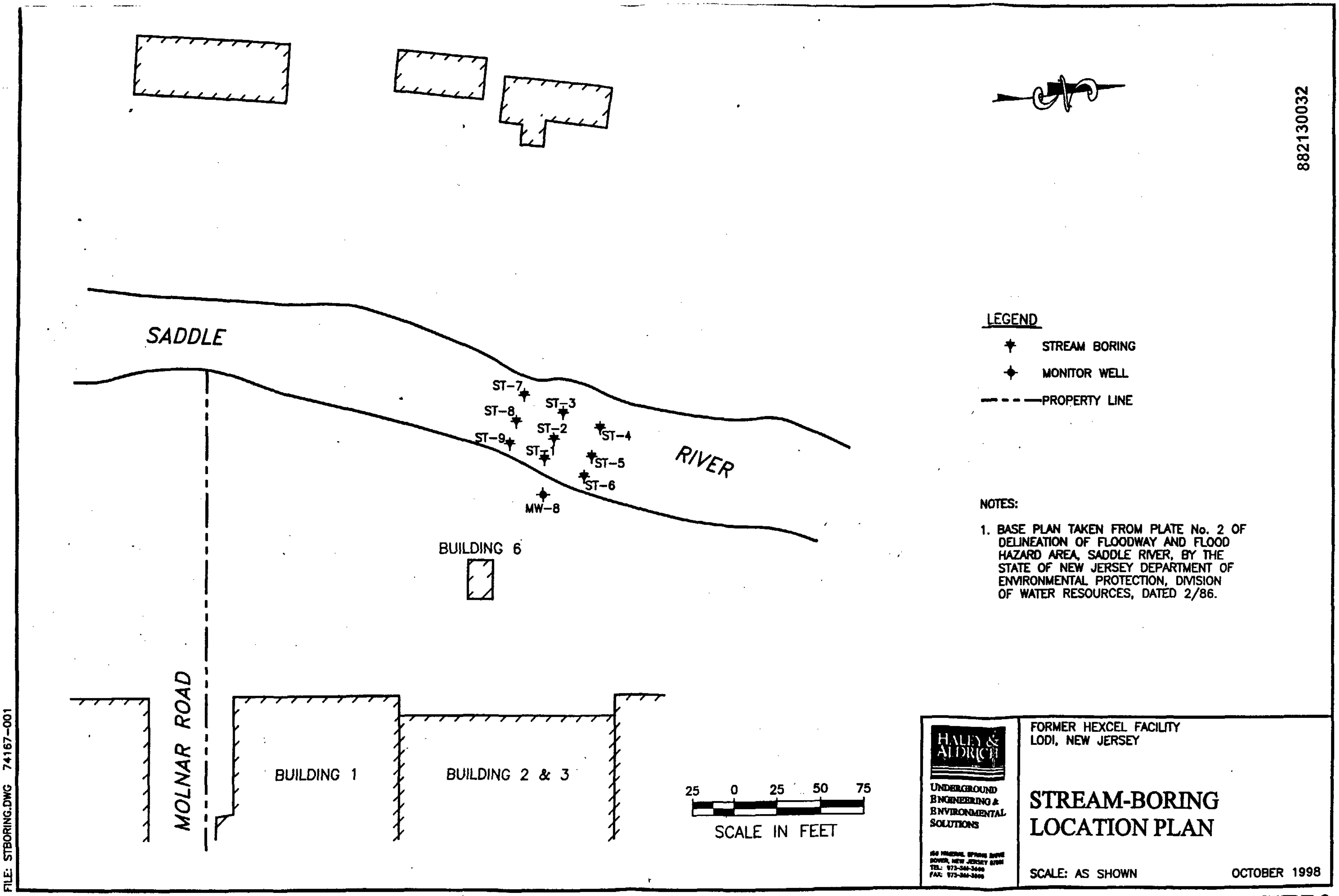
882130032
SADDLE
RIVER
ST-7
ST-3
ST-8
ST-2
ST-4
ST-9
ST-1
ST-5
ST-6
MW-8
BUILDING 6
MOLNAR ROAD
BUILDING 1
BUILDING 2 & 3
25 0 25 50 75
SCALE IN FEET
LEGEND
STREAM BORING
MONITOR WELL
PROPERTY LINE
NOTES:
1. BASE PLAN TAKEN FROM PLATE No. 2 OF DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA, SADDLE RIVER, BY THE STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES, DATED 2/86.
HALEY & ALDRICH
UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS
FORMER HEXCEL FACILITY
LODI, NEW JERSEY
STREAM-BORING LOCATION PLAN
SCALE: AS SHOWN
OCTOBER 1998
FILE: STBORING.DWG 74167-001

FIGURE 3